

### Features

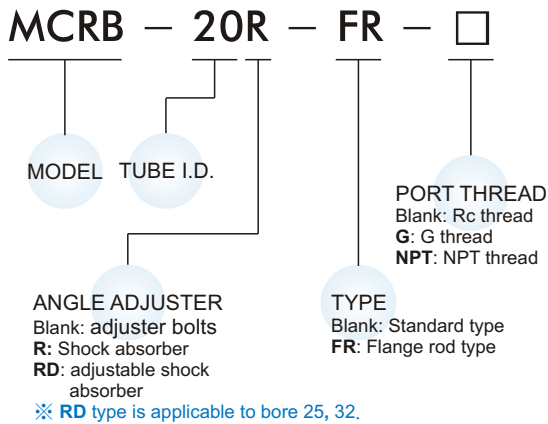
- Twin rack and pinion fitted as standard.
- Can be adjusted between 0 and 190 degrees.
- Simple mounting of sensors.
- Magnetic as standard.

### Specification

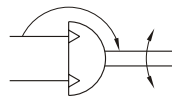
Model		MCRB			
Acting type	Double acting				
Bore size (mm)	φ 16	φ 20	φ 25	φ 32	
Port size	Rc1/8				
Medium	Air				
Operating pressure range	0.1~1 MPa				
Proof pressure	1.5 MPa				
Ambient temperature	- 5~+ 60°C (No freezing)				
Lubrication	Not required				
Cushion	NBR spacer				
Allowable kinetic energy	Cushion pad	0.007J	0.040J	0.081J	0.32J
	Cushion	0.039J	0.116J	0.294J	1.6J
Stable rotation time regulation range	0.2~1.0 s/90°				
Sensor switch (※)	RCD				
Weight (kg)	0.7	1.16	1.57	3.07	

※ RCD specification, please refer to page V-08.

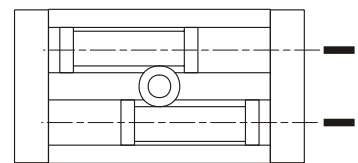
### Order example



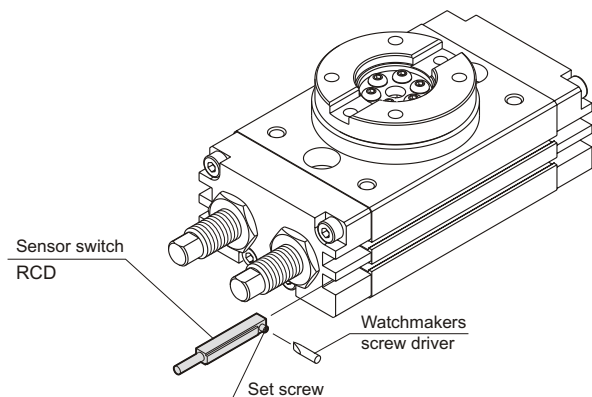
### Symbol



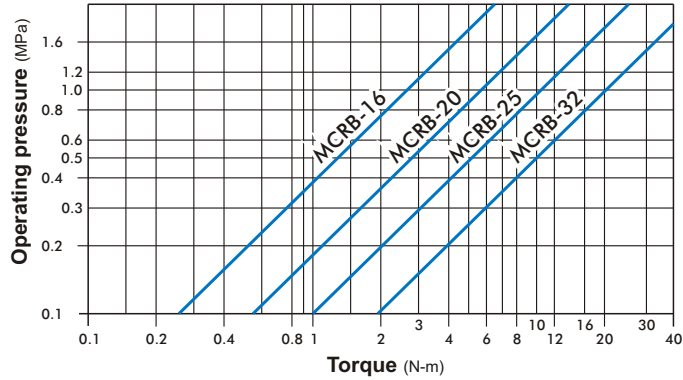
### Action profile



### Installation of sensor switch



### Torque diagram



### Theoretic force

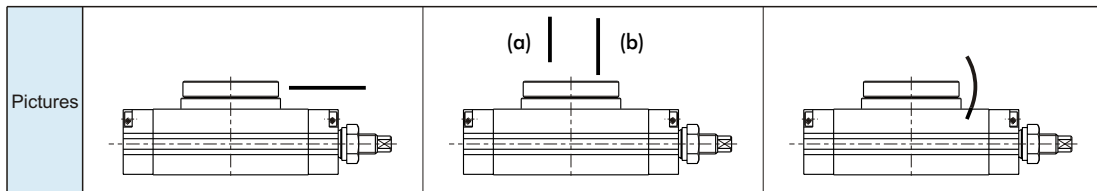
unit: N · m (kgf · m)

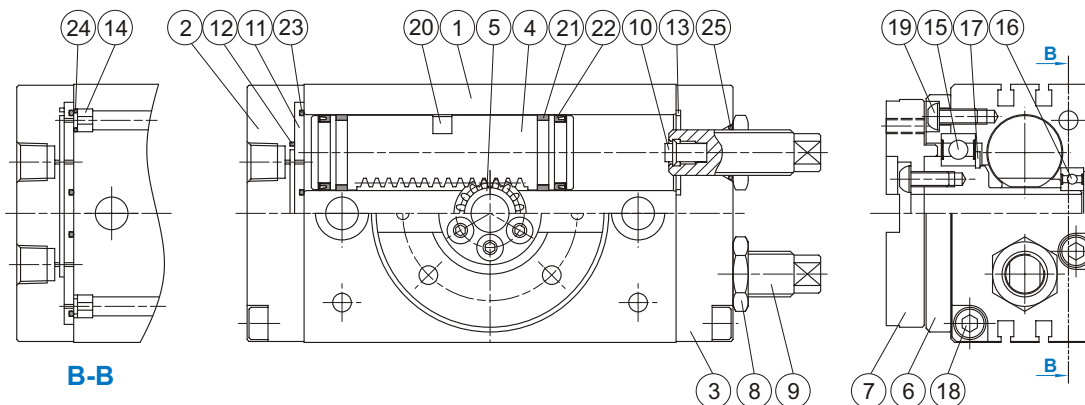
Type	MCRB				
Bore	16	20	25	32	
Operating pressure (Mpa)	0.1	0.24(0.02)	0.50(0.05)	0.98(0.1)	1.94(0.2)
	0.2	0.48(0.05)	1.01(0.1)	1.96(0.2)	3.86(0.39)
	0.3	0.72(0.07)	1.51(0.15)	2.95(0.3)	5.80(0.59)
	0.4	0.96(0.1)	2.01(0.2)	3.93(0.4)	7.72(0.79)
	0.5	1.21(0.12)	2.51(0.25)	4.91(0.5)	9.86(1.0)
	0.6	1.45(0.15)	3.02(0.3)	5.89(0.6)	11.58(1.18)
	0.7	1.69(0.17)	3.52(0.35)	6.87(0.7)	13.52(1.38)

### Allowable Load

Set the load and moment to be applied to the table within the allowable values shown in the table below. (Values outside of limitations will cause excessive play, deteriorate accuracy, and shorten service life.)

Bore	Allowable radial load (N)	Allowable thrust load (N)		Allowable moment (N.m)
		(a)	(b)	
16	78	74	78	2.4
20	147	137	137	4.0
25	196	197	363	5.3
32	314	296	451	9.7



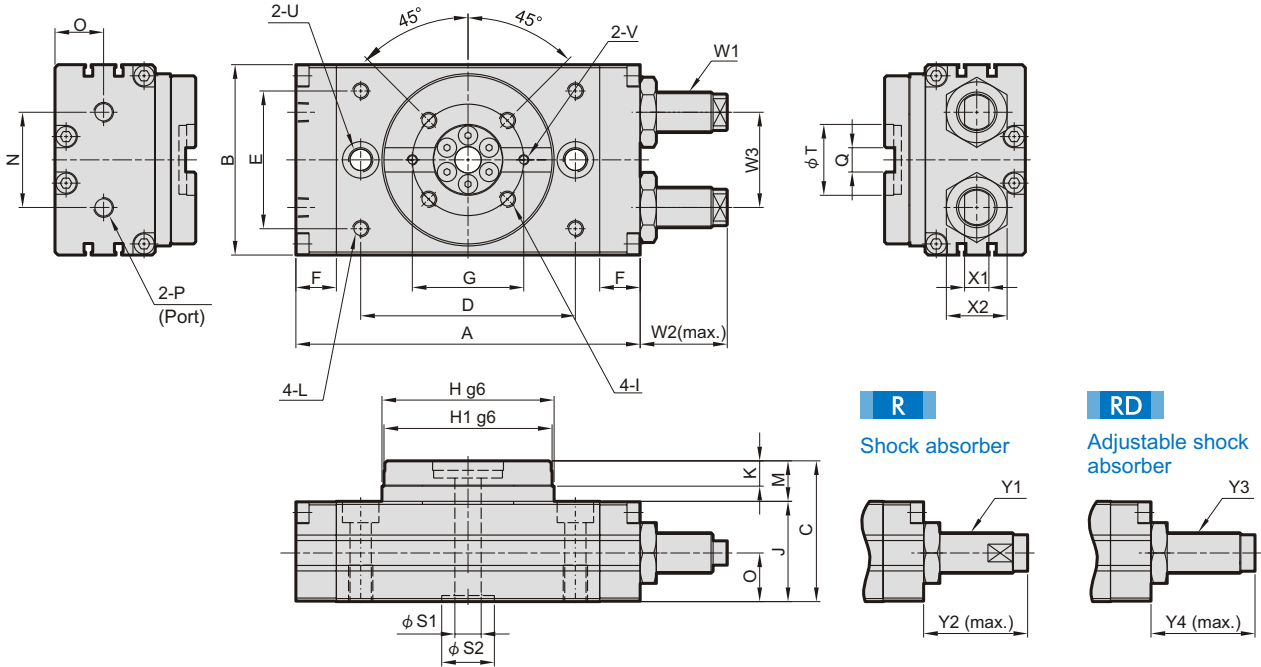


### Material

No.	Part name	Material	Q'y	Repair kits (inclusion)
1	Body	Aluminum alloy	1	
2	Cover	Aluminum alloy	1	
3	End cover	Aluminum alloy	1	
4	Piston	Stainless steel	2	
5	Pinion	SCM	1	
6	Bearing retainer	Aluminum alloy	1	
7	Table	Aluminum alloy	1	
8	Seal nut	Stainless steel	2	
9	Shock absorber	Stainless steel	2	
10	Cushion pad	NBR	2	●
11	Plate	Aluminum alloy	1	
12	Packing	NBR	1	●
13	Gasket	NBR	2	●
14	Fixed	Copper	2	
15	Ball bearing	Bearing steel	1	
16	Ball bearing	Bearing steel	1	
17	Snap ring	Spring steel	1	
18	Screw	SCM	8	
19	Screw	SCM	12	
20	Magnet	Magnet material	2	
21	Wearing	Teflon	4	
22	Piston packing	NBR	4	●
23	O ring	NBR	2	●
24	O ring	NBR	2	●
25	O ring	NBR	2	●

### Order example of repair kits

Tube I.D.	Repair kits
φ 16	<b>PS-MCRB-16</b>
φ 20	<b>PS-MCRB-20</b>
φ 25	<b>PS-MCRB-25</b>
φ 32	<b>PS-MCRB-32</b>



Code Tubrl.D.	A	B	C	D	E	F	G	H	H1	I	J	K	L	M	N	O	P
16	108	58	47	62	38	15	38	50	48	M5×7dp,P.C.D38	33	8	M5×8dp	14	26	15.5	Rc1/8
20	128	68	55	78	47	15	46	62.5	60	M6×7dp,P.C.D46	38	10	M6×8dp	17	27	18.5	Rc1/8
25	135.5	77	58.5	84	55	15.5	48	67	65	M6×9dp,P.C.D48	41.5	10	M6×8dp	17	37	20	Rc1/8
32	170	94	69.5	106	68	20	55	85	83	M8×10dp,P.C.D55	49.5	12.5	M8×8.5dp	20	47	24	Rc1/8

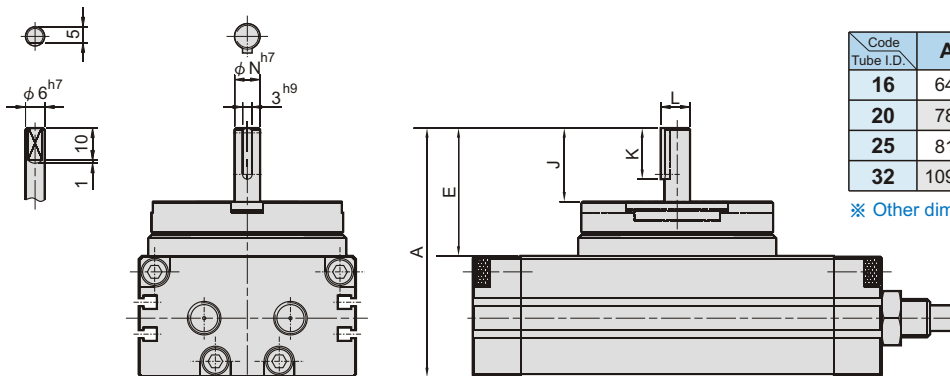
Code Tubrl.D.	Q	S1	S2	T	U	V	W1
16	8 <sup>+0.03</sup> <sub>-0</sub> (wide)×3.3dp	6	17 (H7)×2.5dp	24 (H7)×3dp	2- $\phi 6.8$ thru, $\phi 11 \times 6.5$ dp, M8×12dp(sink)	M3×4dp	M10×1.0
20	10 <sup>+0.03</sup> <sub>-0</sub> (wide)×3.5dp	10	22 (H7)×2.5dp	32 (H7)×3dp	2- $\phi 8.6$ thru, $\phi 14 \times 8.5$ dp, M10×15dp(sink)	M4×6dp	M12×1.0
25	12 <sup>+0.03</sup> <sub>-0</sub> (wide)×4dp	13	22 (H7)×3dp	32 (H7)×3.7dp	2- $\phi 8.6$ thru, $\phi 14 \times 8.5$ dp, M10×15dp(sink)	M4×5dp	M14×1.5
32	12 <sup>+0.03</sup> <sub>-0</sub> (wide)×5dp	13	26 (H7)×3dp	35 (H7)×4.7dp	2- $\phi 10.5$ thru, $\phi 18 \times 10.5$ dp, M12×18dp(sink)	M5×5dp	M20×1.5

Code Tubrl.D.	W2	W3	X1	X2	Y1	Y2	Y3	Y4
16	27	26	7	17	MAC1007-SN	31	—	—
20	23	32	8	19	MAC1210-SN	36	—	—
25	36	37	8	22	MAC1412-SN-01Q(opposite sides 12)	50	MAD1410-N	72
32	43	47	12	30	MAC2015-SN-01Q(opposite sides 18)	51	MAD2016-CN	96

### Flange rod type

$\phi 16$

$\phi 20 \sim \phi 32$



Code Tube I.D.	A	E	J	K	L	N
16	64.5	31.5	17.5	-	-	-
20	78	40	23	16	9.2	8
25	81.5	40	23	20	11.2	10
32	109.5	60	40	20	13.2	12

※ Other dimensions are the same as standard type.